

slp 9/03

Work Order ID 67059

Monday, March 07, 2011 9:56:18 AM



Item ID: D4312-041
Revision ID: PRELIM
Item Name: Cabin Roof Grab Rail Assembly

Accept



Setup Start



Stop



Start Date: 3/7/2011 Start Qty: 2.00
Required Date: 3/9/2011 Req'd Qty: 2.00



Cust Item ID:
Customer:

~~PRELIMINARY~~
~~ISSUE~~

Run Start



Stop



Approvals: Process Plan: W Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D4312	PA3 <u>PA3</u> A <u>19</u>

100 0.00



Small Fab

Small Fab

Memo

- 1- Cut tubing to required length 38" 0.00 8.925
2- Bend as per dwg and trim to size 8.560 each side of middle line
3- Drill holes as per dwg bend by the outside
4- Transfer drill tubing hole into D3787-1 perpendicular to existing hole.
5- Assemble as per dwg

sb/m 2

PTO
next page

110



QC

Quality Control

QC5- Inspect part completeness to step on W/O

Memo


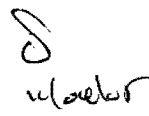

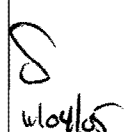
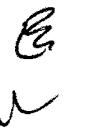
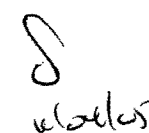
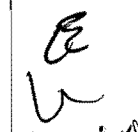

0.00 - inspect to pay
Dm only.
0.00 - test Rtk on "white whale"

8/10/05

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D4312-041 PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR: <u>67059</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
11/03/11	100	Design change for Aluminum tubing 1.00" X .065 per Harvey + 1st piece was scrap too short 11/1/11		Scrap part that were made in stainless tubing	SB 11/04/05			
		measure change on drawing piece were too short dwg asking for 23.50 change for 24.100		Scrap & destroy part and make replace with new dwg	SB 11/04/05			
		FL						






NOTE: Date & initial all entries



Work Order ID 67059



Monday, March 07, 2011 9:56:18 AM



Page 2

Item ID: D4312-041 Accept  Setup Start 
Revision ID: PRELIM Stop 
Item Name: Cabin Roof Grab Rail Assembly
Start Date: 3/7/2011 Start Qty: 2.00  Cust Item ID:
Required Date: 3/9/2011 Req'd Qty: 2.00  Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start 
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop 

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120  Packaging Packaging	Identify as per dwg & Stock Location: _____ Memo	0.00 0.00							<i>Sent to BAGLE.</i> <i>11/4/13</i> <i>22</i>
130  QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00							<i>11/5/16</i> <i>MF</i> <i>11-04-05</i>

POSITIVE RECALL
TIVE 11.03.07 AUTH *U*
JMP DATE 11/05/13

RD2370

Picklist Print

Monday, March 07, 2011 9:56:15 AM

Page 1

Work Order ID: 67059

Parent Item: D4312-041

Parent Item Name: Cabin Roof Grab Rail Assembly

Start Date: 3/7/2011


Required Date: 3/9/2011

Start Qty: 2.00


Required Qty: 2.00

Comments: IPP reva 11.03.07 new issue EC verified by:DD


Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D3787-1		Manufactured	No			100	Each	27.0000	2	4			
													
Foot													

Location	Loc Qty	Loc Code
ST249A	27	
46597	2	
55763	14	
62467	10	
62968	1	

M304TR1.000W.065		Purchased	No			100	f	18.7725	2.3	4.6			
													
304 RD Tube 1.00 x .065W													

Location	Loc Qty	Loc Code
MAT	18.77247368	
108922	1.86	
110010	0.91247368	
115593	16	

MS21042L04		Purchased	No			100	Each	122.0000	2	4			
													
Nut													

Location	Loc Qty	Loc Code
ST301	122	
1269	38	
1582	84	

M116188

4

Picklist Print

Monday, March 07, 2011 9:56:15 AM

Work Order ID: 67059



Parent Item: D4312-041



Parent Item Name: Cabin Roof Grab Rail Assembly

Start Date: 3/7/2011

Required Date: 3/9/2011

Start Qty: 2.00

Required Qty: 2.00

A MS 27039-4-21 *BR*

MS35207-284

Purchased

No

100

Each

145.0000

2

4



Screw

M 116845



SB 116845

Location

Loc Qty

Loc Code

ST295

145

8628

145

4

NAS1149D0463J

Purchased

No

100

Each

598.0000

2

4



Washer



SB 116845

Location

Loc Qty

Loc Code

ST297

182

116304

182

ST298

416

110914

4

115622

38

116025

118

116289

203

116805

53

M 117065

4

DART AEROSPACE LTD		Work Order:	67059
Description: 2 RAIL		Part Number:	D4312-1
Inspection Dwg: D4312	Rev: P04		Page 1 of 1

☒ First Article ☐ Prototype

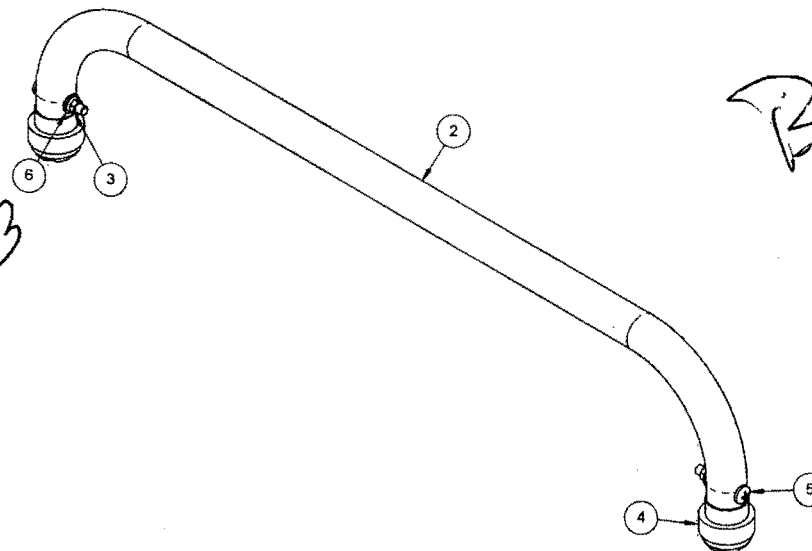
[illegible]

Measured by: <i>ml</i>		Audited by: <i>[Signature]</i>		Prototype Approval: N/A	
Date: <i>11/04/05</i>		Date: <i>11/04/05</i>		Date: N/A	
Rev	Date	Change			
A		New Issue			

to Paul Dan only

Revised by	Approved
KJ/JLM	

ITEM NO.	QTY. -041	PART NUMBER	DESCRIPTION
1	X	D4312-041	CABIN ROOF GRAB RAIL ASSEMBLY
2	1	D4312-1	RAIL
3	2	MS21042L04	NUT
4	2	MS22034-1	ADAPTER, QUICK DISCONNECT
5	2	MS35207-284	SCREW
6	2	NAS1149D0463J	WASHER



D4312-041 CABIN ROOF GRAB RAIL ASSEMBLY

PRELIMINARY ISSUE

10.12.15

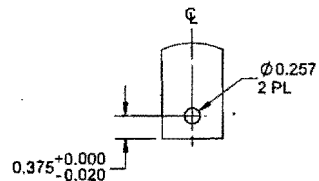
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.53 lbs

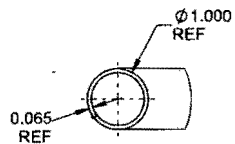
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REV.	DESCRIPTION	BY DATE
DESIGN		
DRAWN		
CHECKED		
MFG. APPR.		
APPROVED		
DE APPR.		
DATE	10.12.15	

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D4312	REV. PA3
TITLE CABIN GRAB RAIL	SCALE NTS
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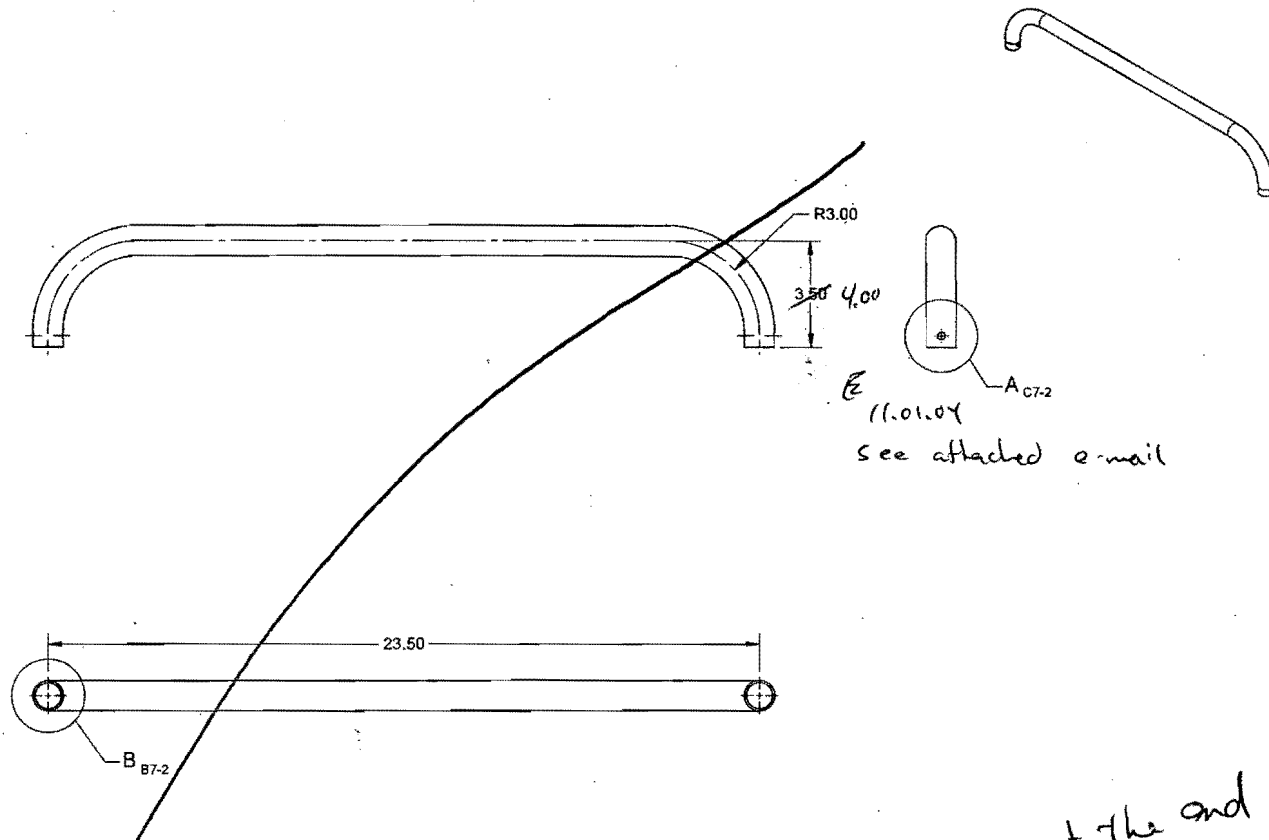
17.250



DETAIL A
SCALE 0.5X
C2-2



DETAIL B
SCALE 0.5X
B6-2



11.01.04
see attached e-mail

Dwg at the end

D4312-1 RAIL

NOTES:

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL TUBING, Ø1.000 X 0.065 WALL
REF M304TR1.000W.065
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.19 lbs

DESIGN		DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN		DRAWING NO.	REV. PA3
CHECKED		D4312	SHEET 2 OF 2
MFG. APPR.		TITLE	SCALE
APPROVED		CABIN GRAB RAIL	NTS
DE APPR.		COPYRIGHT © 2010 BY DART AEROSPACE LTD	
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Linda Lacelle

From: Harvey Siemens <hsiemens@dartaero.com>
Sent: March 4, 2011 6:06 PM
To: 'Linda Lacelle'
Subject: RE: D4312-041

Yup I'm good with it.

Regards,

Harvey Siemens

Mechanical Designer
DART Aerospace Ltd.

P: 403-717-0328
F: 403-717-1288
E: hsiemens@dartaero.com
W: www.dartaero.com
M: 1060 McTavish Road NE, Calgary, Alberta, T2E 7G6

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From: Linda Lacelle [mailto:llacelle@dartaero.com]
Sent: March-04-11 12:42 PM
To: 'Harvey Siemens'
Subject: D4312-041

Hi Harv,
Eric said you were fine with the MS22034-1B(D3787-1), instead of MS22034-1..can you confirm this pls.

Thank You,
Linda Lacelle
Production Manager
Dart Aerospace Ltd
Hawkesbury, ON
Phone: 613 632 9577
Fax: 613 632 1053
Cell: 613 676 1655

Eric Charbonneau

From: David Shepherd <dshepherd@dartaero.com>
Sent: April 1, 2011 4:51 PM
To: 'Eric Charbonneau'
Cc: 'Brad Jones'; 'Marc Bellavance'; dcampbell@dartaero.com; 'Daryl Leger'; 'Linda Lacelle'; Harvey Siemens; 'Kelly Labas'; 'Bill Beckett'
Subject: RE: Remaining Westpac Parts

Eric,

See below regarding grab rail.

David

From: Kelly Labas [mailto:klabas@eaglecopters.com]
Sent: Friday, April 01, 2011 9:33 AM
To: 'Bill Beckett'
Cc: 'David Shepherd'; 'Brad Jones'; 'Marc Bellavance'; dcampbell@dartaero.com; 'Daryl Leger'; 'Linda Lacelle'
Subject: FW: Remaining Westpac Parts

Good Morning,

Thanks for pulling out all the stops to help complete this massive project, I apologize if there was a lack of communication between engineering and maintenance, it's usually avionics and maintenance.

Marc, The customer has no problem with us lowering the grab rail 1/2-3/4 inch.

Marc, In regards to the hinge door gas strut; the bracket didn't work so Daniel is redesigning it and we have a strut here but need you to confirm it's the one we need (some confusion on our part) we have a PN: D3552-21, please confirm.

The list Daniel has below covers the outstanding items.

FYI:

The 2ea D4334-2 camera pockets are a change, the original 2 did not allow us to adjust the angle of the camera so we redesigned it.

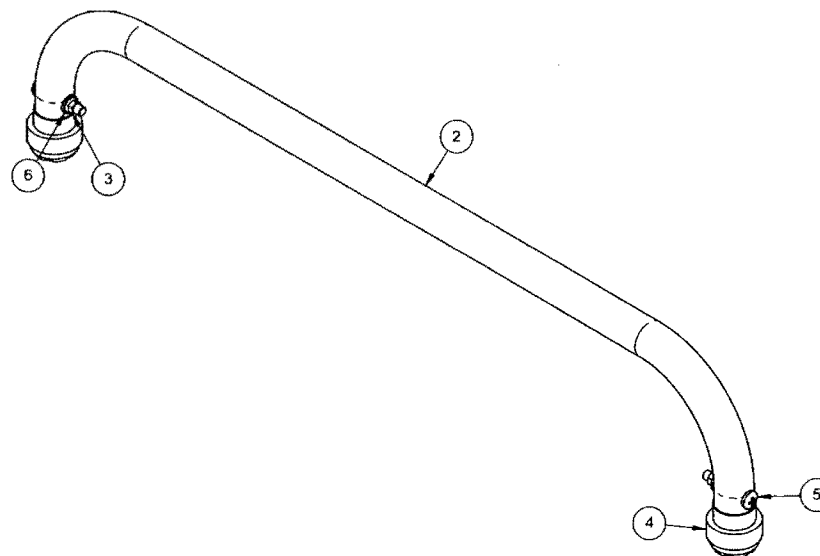
The pockets for the interior are what they are, unfortunately we couldn't tell you exactly what we needed until the customer picked locations for all components and we built and installed all mounting hardware and components. Everyone (including your engineers and the customer) were well aware of the potential problems we were facing with this interior design as well as the flow of events to get where we are today. As with any new/major project the stress level rises dramatically as we near the end of the project and have to deal with all the 'I need it now' items. Fortunately we are all damn good at this part.

Again thanks for the help.

KL

From: Brad Jones [mailto:bjones@eaglecopters.com]
Sent: Friday, April 01, 2011 5:47 AM

ITEM NO.	QTY. -041	PART NUMBER	DESCRIPTION
1	X	D4312-041	CABIN ROOF GRAB RAIL ASSEMBLY
2	1	D4312-1	RAIL
3	2	MS21042L04-4	NUT
4	2	MS22034-1	ADAPTER, QUICK DISCONNECT
5	2	MS35207-284	SCREW
6	2	NAS1149D0463J	WASHER



**PRELIMINARY
ISSUE**

D4312-041 CABIN ROOF GRAB RAIL ASSEMBLY

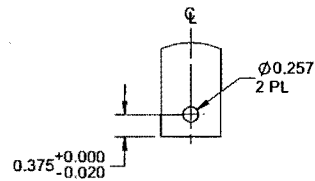
PRELIMINARY ISSUE

11.04.04

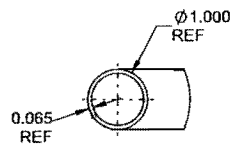
- NOTES:
- 1) MATERIAL: N/A
 - 2) FINISH: N/A
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
 - 7) WEIGHT: 0.54 lbs

PA4	NEW ISSUE	11.04.04
REV.	DESCRIPTION	BY DATE
DESIGN		
DRAWN		
CHECKED		
MFG. APPR.		
APPROVED		
DE APPR.		
DATE	11.04.04	

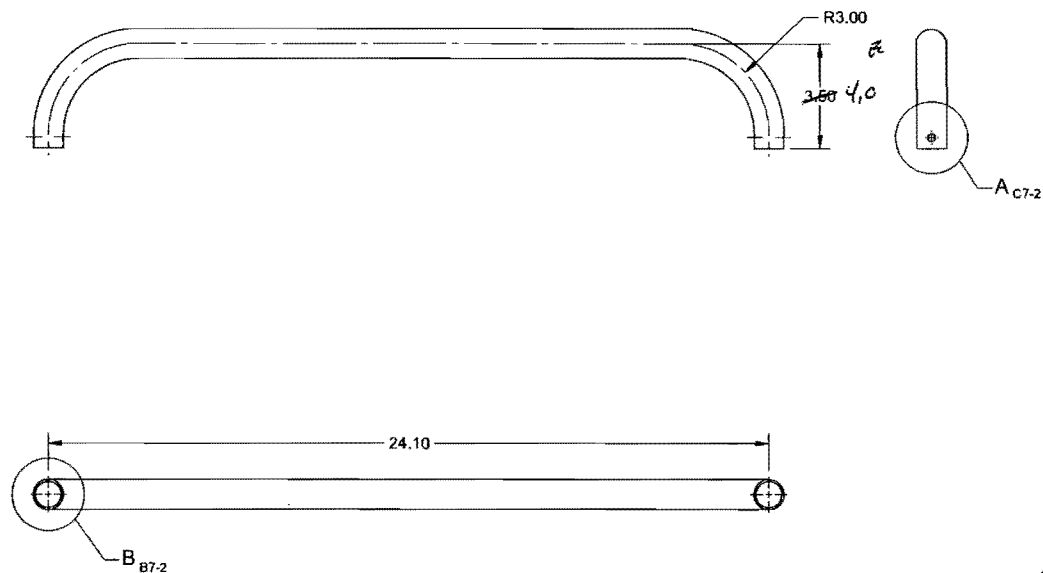
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D4312	REV. PA4 SHEET 1 OF 2
TITLE CABIN GRAB RAIL	SCALE NTS
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DETAIL A
SCALE 0.5X
C2-2



DETAIL B
SCALE 0.5X
B6-2



D4312-1 RAIL

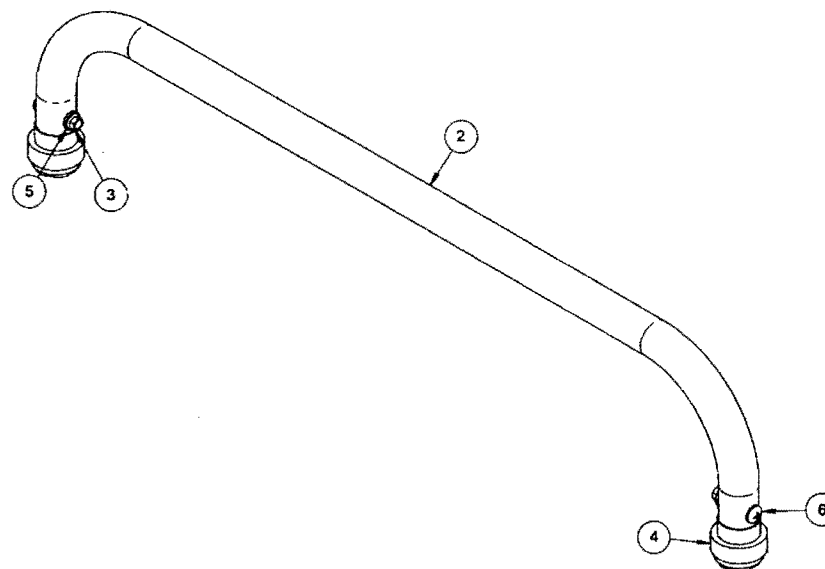
**PRELIMINARY
ISSUE**

NOTES:

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL TUBING, ϕ 1.000 X 0.065 WALL
REF M304TR1.000W.065
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.20 lbs

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. PA4
MFG. APPR.		D4312	SHEET 2 OF 2
APPROVED		TITLE	SCALE
DE APPR.		CABIN GRAB RAIL	NTS
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ITEM NO.	QTY. -041	PART NUMBER	DESCRIPTION
1	X	D4312-041	CABIN ROOF GRAB RAIL ASSEMBLY
2	1	D4312-1	RAIL
3	2	MS21042-4	NUT
4	2	MS22034-1	ADAPTER, QUICK DISCONNECT
5	2	NAS1149D0463J	WASHER
6	2	MS27039-4-20	SCREW



D4312-041 CABIN ROOF GRAB RAIL ASSEMBLY

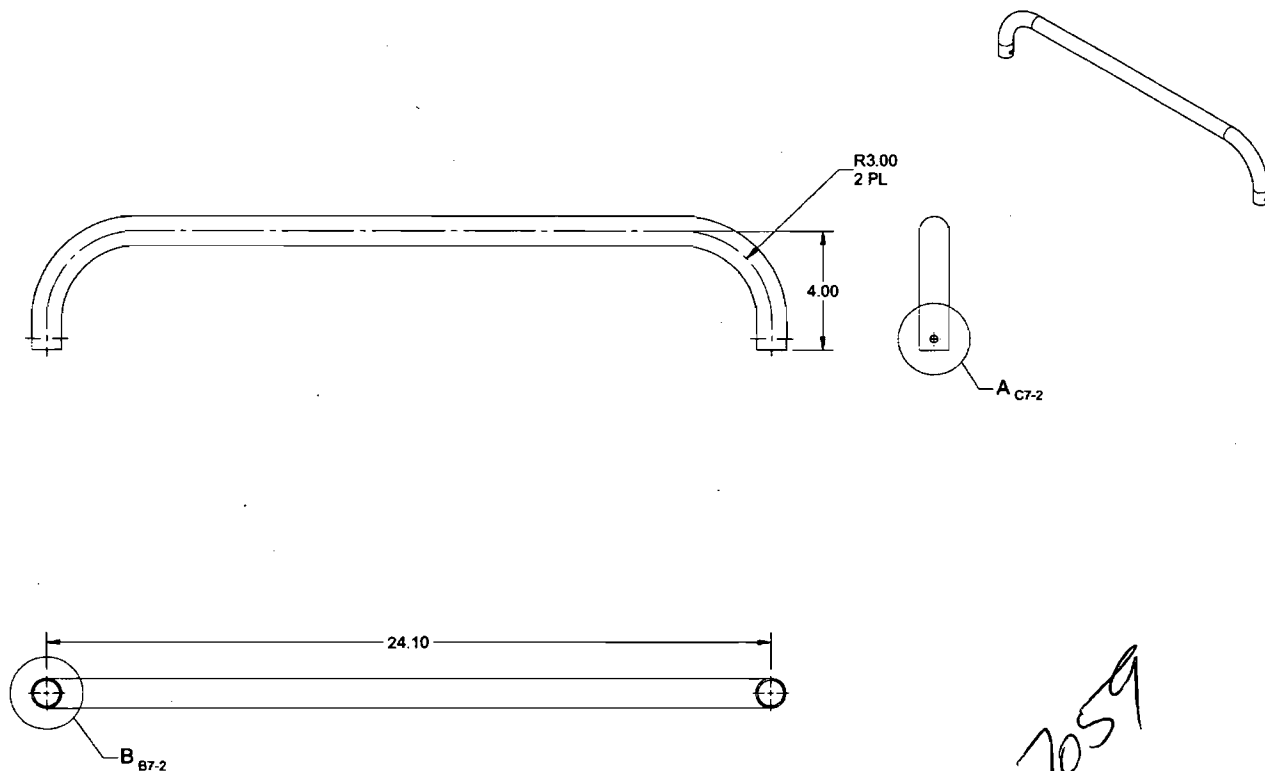
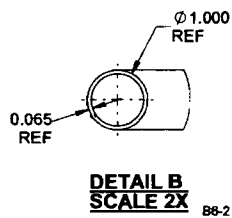
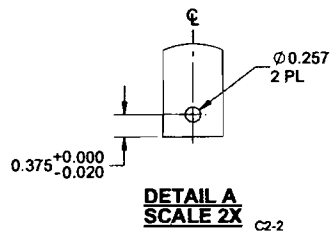
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- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.54 lbs

A		NEW ISSUE		BY	DATE
REV.		DESCRIPTION		BY	DATE
DESIGN		DART AEROSPACE LTD			
DRAWN		HAWKESBURY, ONTARIO, CANADA			
CHECKED		DRAWING NO.	D4312	REV. A	
MFG. APPR.		SHEET 1 OF 2			
APPROVED		TITLE	CABIN GRAB RAIL	SCALE	NTS
DE APPR.		DATE 11.04.05			
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67059

RELEASED
2011-05-18



67059

RELEASED
2011-05-10
ND

- NOTES:**
- 1) MATERIAL: AISI 304/316 STAINLESS STEEL TUBING, Ø 1.000 X 0.065 WALL
REF M304TR1.000W.065
 - 2) FINISH: N/A
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
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DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4312	SHEET 2 OF 2
APPROVED		TITLE	SCALE
DE APPR.		CABIN GRAB RAIL	NTS
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